

STF STATUS AND PLANS

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Abstract

The superconducting RF test facility (STF) in KEK is aiming to promote R&D of superconducting linear accelerator to be used in the International Linear Collider (ILC). The phas-10⁻¹ STF construction was completed in 2008. They included high power RF operation of four 1.3GHz SC cavities in the short-cryostat and infrastructure construction to support the superconducting accelerator module fabrication. The new phase, STF phas-10⁻² plan is aiming to realize ILC RF unit construction and demonstration its performance together with preparation and study of industrial production. We will construct 12m-long ILC-RDR cryomodules including total 26 superconducting cavities and 1 SC quadrupole magnet. It has also ILC structure electron beam generated by a photo-cathode RF gun and conditioned by following two SC capture cavities. Phas-10⁻² also includes the compact bright X-ray source development referred as 'quantum beam project' which is founded by the MEXT as an intermediate milestone. The industrialization of cavity fabrication and cost reduction is also one of the targets of this phas-10⁻² construction. This paper summarized the STF phas-10⁻¹ results and conclusion, and plans of phas-10⁻².

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